Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

"In some of them, certainly, it is not an over-statement to say that the chronology of the evolution of form, the development of the individual, the gradations in the adults and the general differential characteristics all tell the same story, and are decisive for the opinion that in all the larger series of shell-bearing Cephalopoda, the nautilian shells belong to several distinct series and arose independently from straight cones through the intermedium of a graded series of arcuate and gyroceran or closely coiled forms. The generic terms, Cyrtoceras, Gyroceras and Nautilus are really only descriptive terms for the different stages in the development of an individual, and also the different stages in the development or evolution of the series of adult forms in time. In other words, each of these genera as now used, include representatives of all the different genetic series of Tetrabranchs, which are either young shells in the corresponding stage of growth, or adult shells in the corresponding stage of evolution."

Professor Hyatt maintains that the Nautilini were derived directly and independently from a straight cone, and that this primitive nautiline form was a close ally and ancestor of the straight orthoceran-like Bactrites of the Silurian. "All the remaining ammonoids are more concentrated in development, and skip the orthoceran, cyrtoceran and gyroceran stages of their evolution in time. They are evidently descendants of the close-coiled Nautilinidæ, and the evidence here is very strong that the whole order of Ammonoideaarose from a single organic center of distribution, the Nautilini of the Silurian. The succession in time, the evidence of gradation in structure and the development exactly accord with this statement. Nautilinidæ, Goniatites, Triassic transition forms of Ammonitinæ and the true Ammonites of the Jura form a perfect progessive series."

During the investigation Professor Hyatt has been able to add to the facts he has already brought forward in support of the law of acceleration, though he now prefers to designate it as "the law of concentration of development." All the more generalized or lower types, he says, have a direct mode of development, and the more specialized or complicated progressive types have, when at the acme of their development, a more indirect mode of development." The types which are descended from these last have often a mode of development which in many forms is an apparent return to the direct mode of development again."

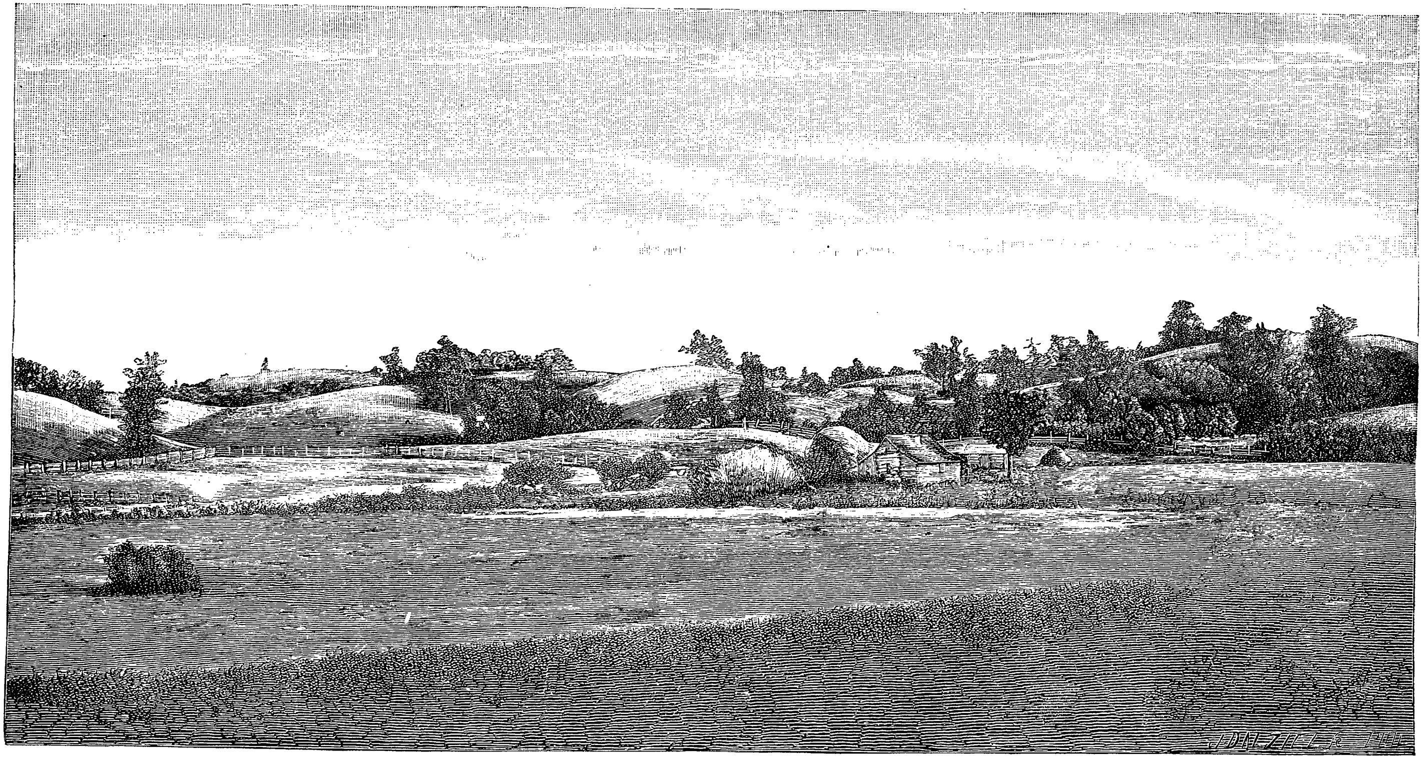
It is impossible to farther epitomize this important paper, and we shall look forward with much interest to the complete illustrated memoir.

PARKER'S ZOÖTOMY.[1]—Undoubtedly a knowledge of animal morphology, or what used to be called comparative anatomy, lies at

---

[1] *A course of Instruction in Zoötomy (Vertebrata).* By T. JEFFEREY PARKER. With 74 illustrations. London, Macmillan & Co., 1884. 12mo, pp. 397. $2.25.

PLATE VIII.


J.DALZIEL. SC. PHIL.

Western face of the Moraine near Eagle, Wisconsin.

the basis of a genuine training in zoölogy, physiology or medicine; no one should undertake to be a systematic zoölogist, a physiologist or embryologist without a thorough knowledge of the anatomy of the leading types of the animal kingdom. The first step the student should take is to become familiar with the anatomy of a polyp, a worm, a mollusk, a crustacean, an insect, as well as a representative of each class of vertebrates. We should, as we are accustomed to with beginners, make this work comparative at the outset. We hear a great deal now-a-days of "animal morphology," we hear less of "comparative anatomy," we prefer the older and less pompous term, as the tendency to extreme specialization even in animal morphology is a dangerous one. Yet it does not appear to be so to the author of the present book. The forms he described are treated as if they were so many separate creations, and this is the only criticism we have to make on a work so carefully prepared and so well proportioned. The book is designed in great part to take the place of a teacher. Now to our mind no teacher who does not in the beginning excite his pupils after dissecting one animal thoroughly to compare it in its leading features with the members of other classes, can successfully teach morphology, whose value as a discipline consists in leading the student to compare as well as observe. A few additional pages of matter would, therefore, we think, have been of decided value in calling the student's attention to and fixing in his memory the facts concerning the resemblances as well as differences in the various types he may dissect. We think this may be done without the pupil's "losing in depth what he gains in breadth."

The list of animals selected and described in this course in zoötomy is as follows: the lamprey, skate, cod, lizard, pigeon and rabbit; if a frog, or better, a salamander, had been added, the list would have been complete, but this point has been covered by the full account of the frog in Huxley and Martin's Biology and Gage's account of the Necturus or mud puppy.

The introduction treats briefly of the tools and methods of preparing the subjects for dissection. The two most important chapters are those on the lamprey and lizard, as the pigeon has already been well described and figured in Rolleston's Forms of Animal Life; and the student can easily get access to accounts of the anatomy of a fish, while the works of Mivart and of Wilder on the cat, would be more useful to the American student than that of the rabbit in this book, however excellent Parker's description may be.

The plan of each chapter or section is excellent, the descriptions are well proportioned, the words to be emphasized are in heavy-faced type, the illustrations are well drawn and engraved, neatly lettered and fully explained. The lamprey is very difficult to dissect, and the species being the same on both continents, this chapter will be particularly valuable to American students. The illustrations in this chapter are also very useful, the skull, with the "branchial basket" and anterior part of the notochord being shown together, besides cuts of the brain-case from above, a full page cut of the longitudinal section of a female from the left side, showing the organs in place; also a view of the urogenital sinus, with the rectum and part of the left kidney, with three transverse sections, one through the branchial region, another through the abdominal, and the third through the caudal; and finally a dorsal view of the brain.

The skate is a novel subject, and its anatomy is carefully described, the skeleton, venous system, urogenital organs, heart and blood-vessels, and nervous system including several views of the brain as well as the ear, being well illustrated. In like manner is the cod described and figured; this chapter will be useful to the American student; the cod's skull, disarticulated, is well figured and briefly described.

Fifty pages are devoted to the account of the lizard (*Lacerta agilis*), and this will be useful in the hands of the American student if living south of Pennsylvania, as he can readily obtain a Sceloporus or swift for dissection. The wood-cuts in this chapter represent the chondrocranium, the scales on the head of several species of lizards, the chief muscles of the ventral aspect and a general view of the body to show the alimentary, circulatory, respiratory and urogenital organs; the latter organs of each sex are also separately figured, as well as the heart and aortic arches, while the brain in different positions is well drawn and engraved. The remainder of the book, comprising the latter half, is devoted to the pigeon and rabbit.

With such a guide as this, and Rolleston's Forms of Life, Brooks' Invertebrate Anatomy, Huxley and Martin's Elementary Biology, Moale on the Turtle and Pigeon, with Parker and Bettany on the Skull, the beginner in zoötomy has full directions and every incentive to lay broad and deep foundations for a knowledge of comparative anatomy.

SHEPARD'S MINERAL RECORD.[1] — This is a bound series of blanks for the use of beginners in the study of minerals, and is preceded by excellent definitions of terms used in examining the physical characters, and of chemical reactions. The only criticisms we should make is, that reference is not made to the system of crystals or the special form, an important feature of instruction in mineralogy, though room is left blank for these points, which might be inserted by the instructor.

---

[1] *Systematic Mineral Record*, with a synopsis of terms and chemical reactions used in describing minerals. Prepared for instructors and students in mineralogy. By EDWARD M. SHEPARD, A.M., professor of biology and geology, Drury College, Springfield, Mo. Adapted to any mineralogy. A. S. Barnes & Co., New York and Chicago. Sm. 4to, pp. 98.